

# **SPIDER TRIVIA AND JOKES**

## **How high could Michael Jordan jump if he were a spider?**

If Michael Jordan could jump proportionately as high as a jumping spider, he would be able to dunk on a 260-foot-high rim.

## **How did the Tarantula get its name?**

The tarantula was named after the Italian seaport city of Taranto, where the hairy venomous wolf spider once abounded.

## **Were any spiders harmed during the filming of Spiderman?**

More than 150 spiders were used in the laboratory scene in the movie "Spider-Man." An assistant auditioned spider actors picking the ones with the most predictable behavior, as the Humane Society looked out for their welfare. The movie's bug consultant, Steve Kutcher, stated that no spiders were harmed.

## **How many spiders are there?**

Scientists have identified 39,900 spider species worldwide, (2,500 species in the United States and Canada). Spiders first appeared on Earth 400 million years ago - about 170 million years before the first dinosaurs.

## **Why isn't a Daddy Long-Legs a spider?**

A Daddy Long-legs doesn't make silk, it is a scavenger and not a predator. It doesn't have a narrow waist or complex sex organs, but, like a spider, it is an arachnid.

[Mouse](#)

- What do you call a 100 spiders on a tire?  
A spinning wheel!
- What did the spider say when he broke his new web?  
Darn it!
- What is red and dangerous?  
Strawberry and tarantula jelly!
- What did the wife spider say to her husband when he tried to explain why he was late?  
Your spinning me a yarn here!
- What is a spiders favorite TV show?  
The newly web game!
- Why are spiders like tops?  
They are always spinning!
- What do you get if you cross a tarantula with a rose?  
I'm not sure, but I wouldn't try smelling it!
- What do you call a big Irish spider?  
Paddy long legs!
- Why did the spider buy a car?  
So he could take it out for a spin!
- What does a spider do when he gets angry?  
He goes up the wall!
- What do you get if you cross a spider and an elephant?  
I'm not sure, but if you see one walking across the ceiling then run before it collapses!
- What did the spider say to the fly?  
We're getting married do you want to come to the webbing?
- Why are spiders good swimmers?  
They have webbed feet!
- How do you spot a modern spider?  
He doesn't have a web he had a website!

# Spider Workshop

Brian Bockhahn

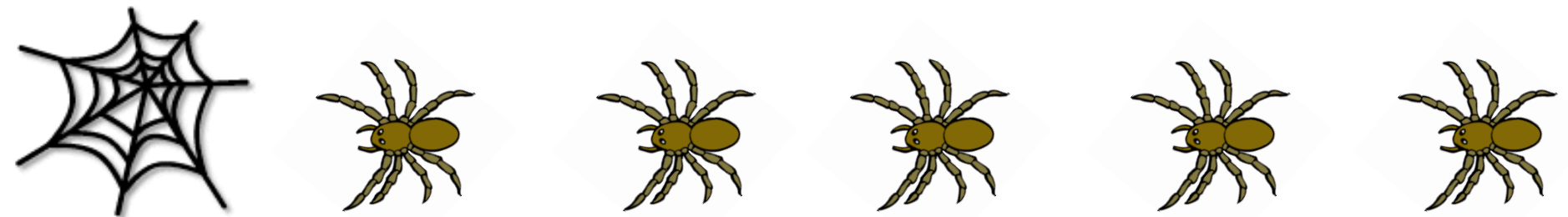
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# Why Spiders?

- Familiar critter
- Unknown species
- Undeservedly despised
- Key member of food “web” eating harmful insects
- Fascinating to watch and study!



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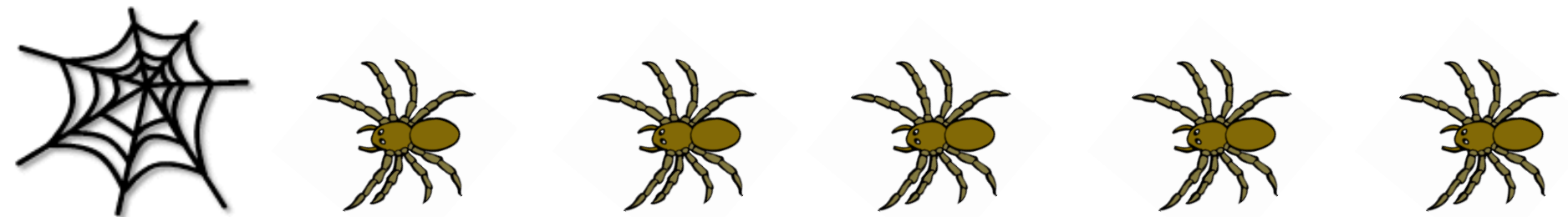
# What are they?

- Animal Kingdom
- Arthropod Phylum
- Arachnida Class
- Orders
  - [Acarina](#) — [mites](#) and [ticks](#) (30,000 species)
  - [Opiliones](#) — phalangids, harvestmen or daddy-long-legs (6,300 species)
  - [Pseudoscorpionida](#) — pseudoscorpions (3,000 species)
  - [Scorpiones](#) — scorpions (2,000 species)
  - [Solifugae](#) — solpugids, windscorpions, camel spiders (900 sps)
  - [Araneae](#) — spiders (40,000 species)



# What are they?

- Order Aranea – spiders
  - 3 Suborders: Mesothelae, Mygalomorphae, Araneomorphae
    - 108 families
    - 3676 Genus
    - Nearly 40,000 species



# Spiders are not insects!

- Spiders

- 2 body parts
- Four pairs of walking legs
- No antennae, jaws or wings
- Chelicerae and pedipalps
- Spinneret to make silk
- 8 ocelli (simple eyes)
- Venom through fangs

- Insects

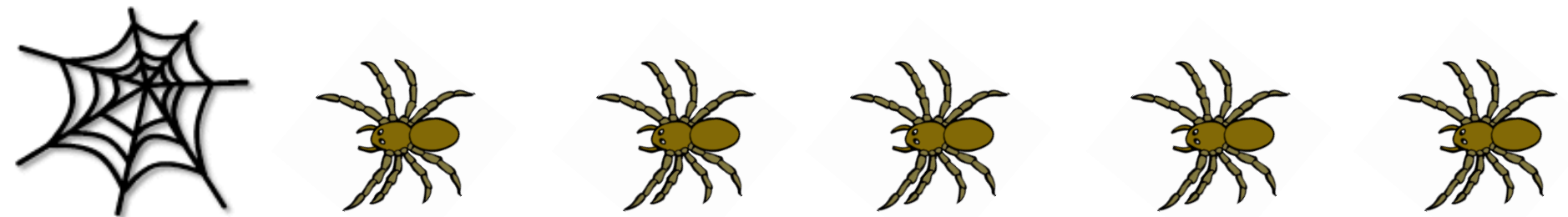
- 3 body parts
- Three pairs of legs
- Antennae, jaws and two pairs of wings on adults
- No adult silk production
- Compound eyes
- Venom through stinger or similar structure





# Distribution

- Worldwide even arctic mountaintops
- Occupy every micro habitat in temperate US
- Specialists and generalists
- Freshwater species
- Suburban and rural

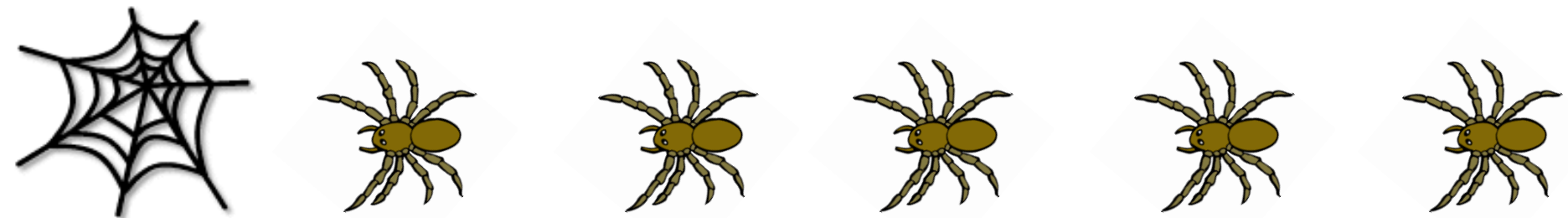


# Largest and smallest

- LARGEST is South America's bird eating tarantula 250mm
- SMALLEST is Samoan orb weaver 0.43mm



- [VIDEO](#)

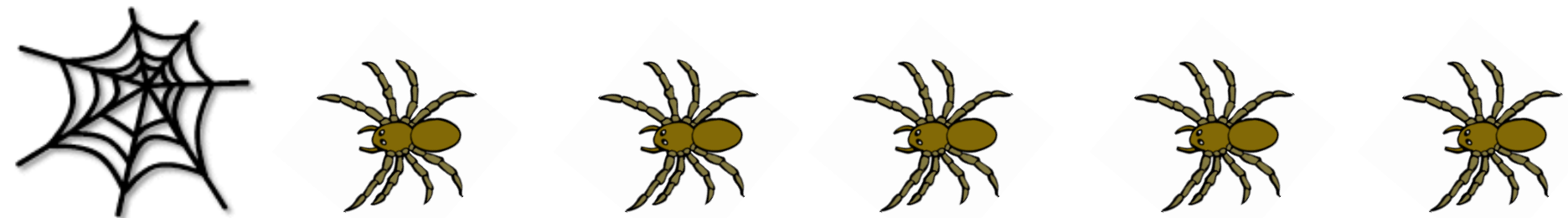






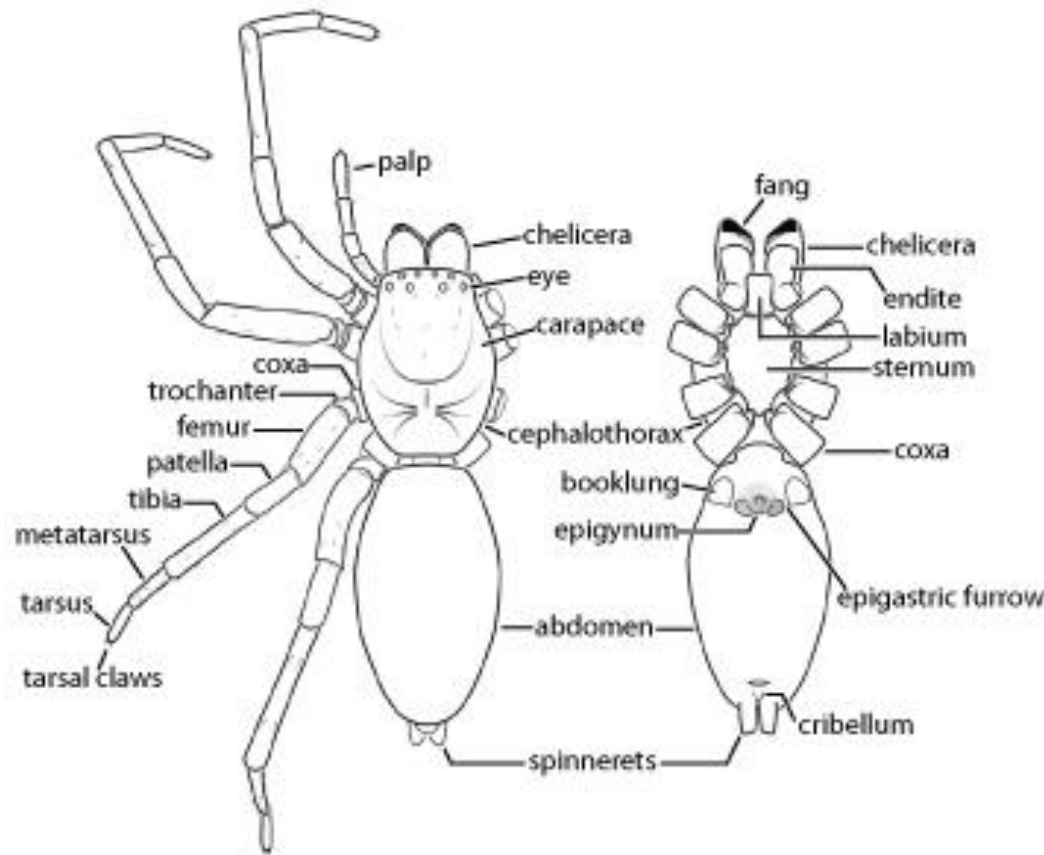
# Sexual dimorphism

- In some species females are much larger than males
- No competition so less cannibalism
- Can even share the same web
- Communities



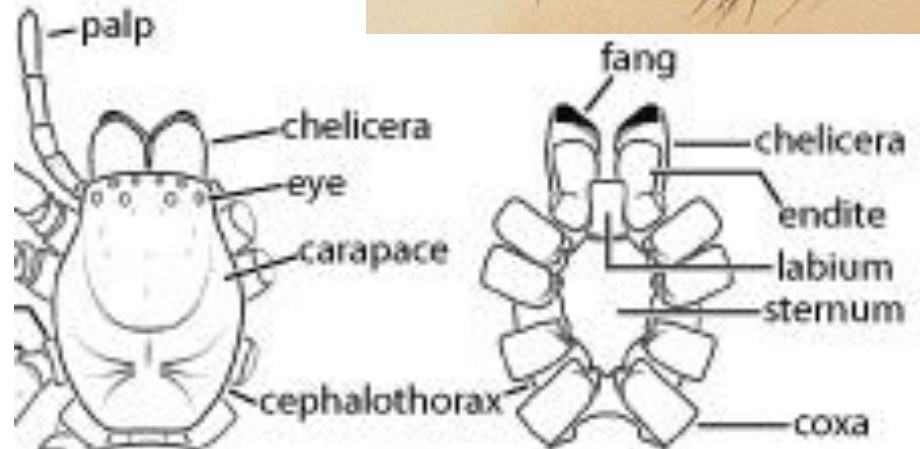
# Anatomy

- Two body regions
- Cephalothorax
  - Eyes
  - Mouthparts
    - chelicerae, fangs and pedipalps
  - legs
- Abdomen
  - Reproductive openings
  - Spinnerets



# Cephalothorax

- Carapace – shield like plate covering
- Chelicerae are the jaws with fang groove
- Hinged fangs are at tip fed by venom duct
- Palps hold prey and assist with mating



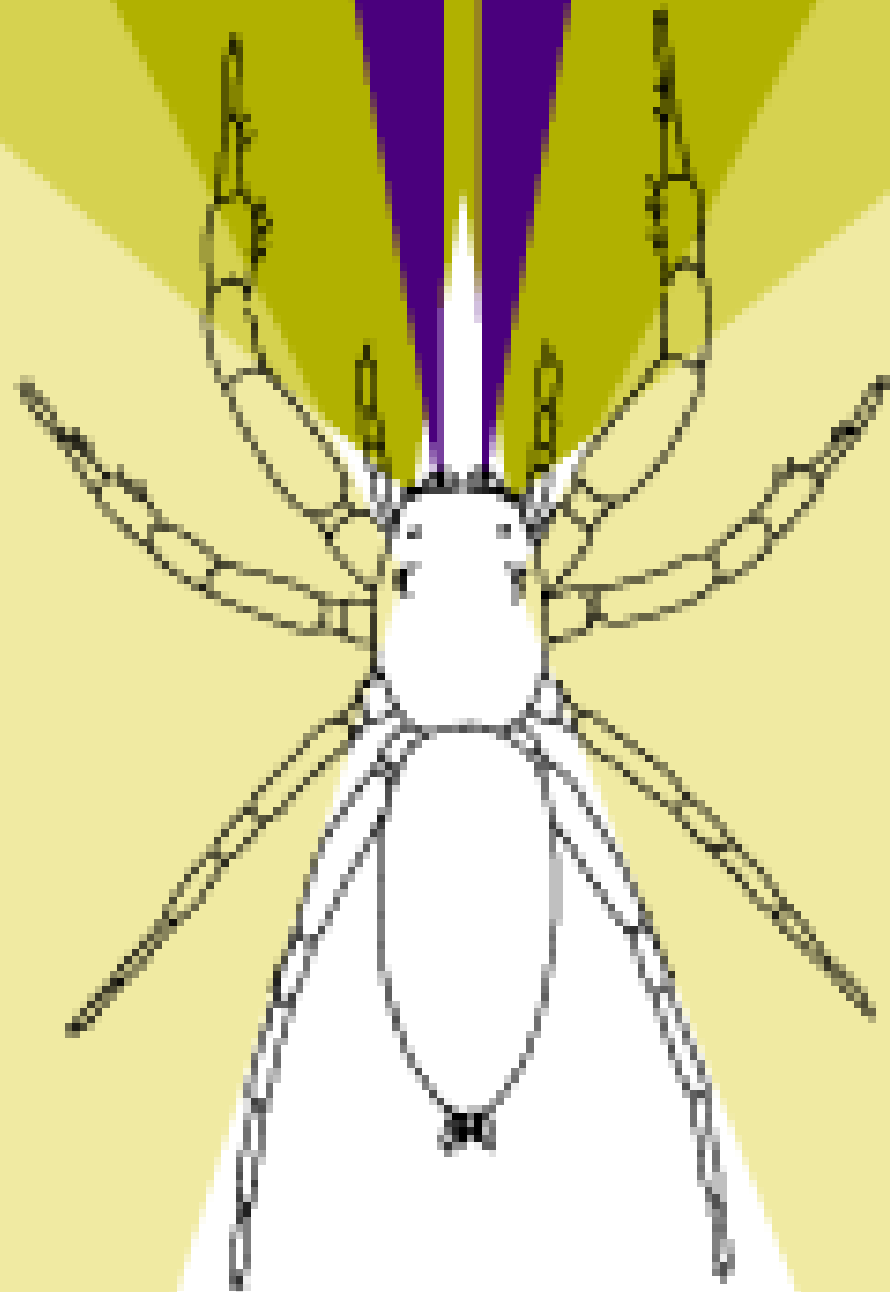


# Cephalothorax

- Eyes consist of four pair of ocelli usually in two rows
  - Anterior and posterior medians and laterals
  - Homogonous and Heterogeneous
  - Night: spotlights
  - Dusk: large posterior



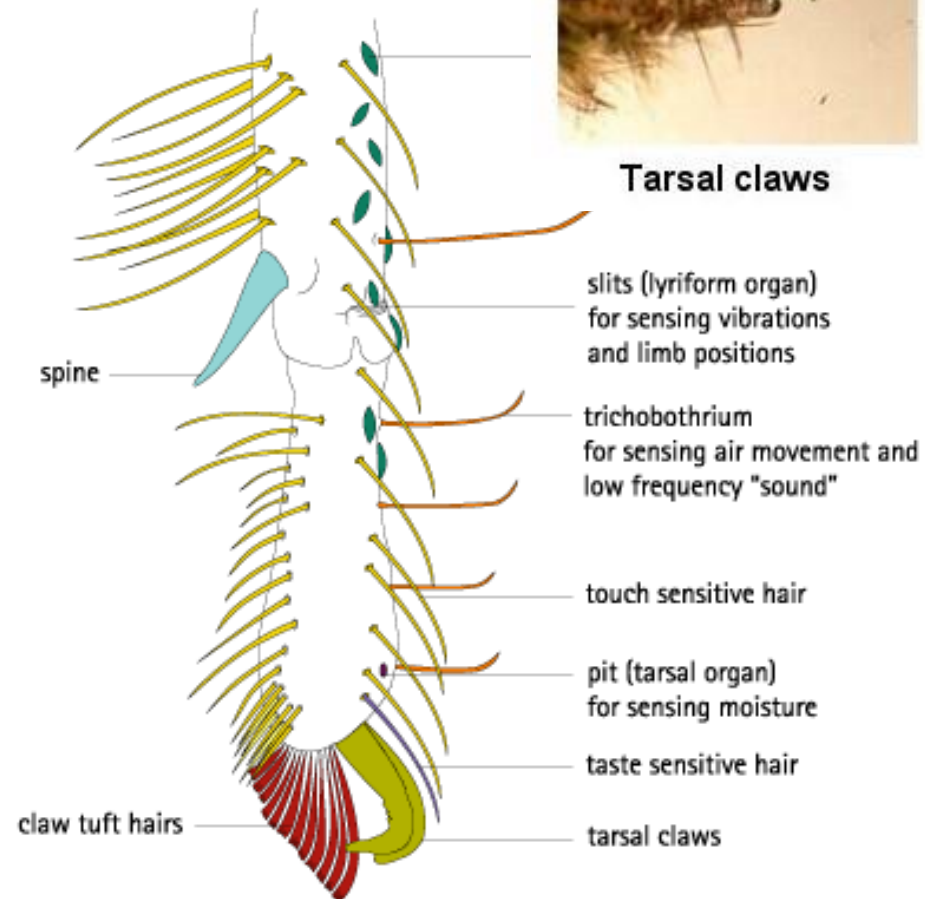
- Day hunter  
sets of eyes
  - Front
  - Side
  - Middle





# Cephalothorax

- Four pairs of seven segmented hairy legs
  - Sensing vibration
  - Mating
  - Defense
  - Locomotion
  - Traction
  - Courtship displays and stridulation



Tarsal claws

slits (lyriform organ)  
for sensing vibrations  
and limb positions

trichobothrium  
for sensing air movement and  
low frequency "sound"

touch sensitive hair

pit (tarsal organ)  
for sensing moisture

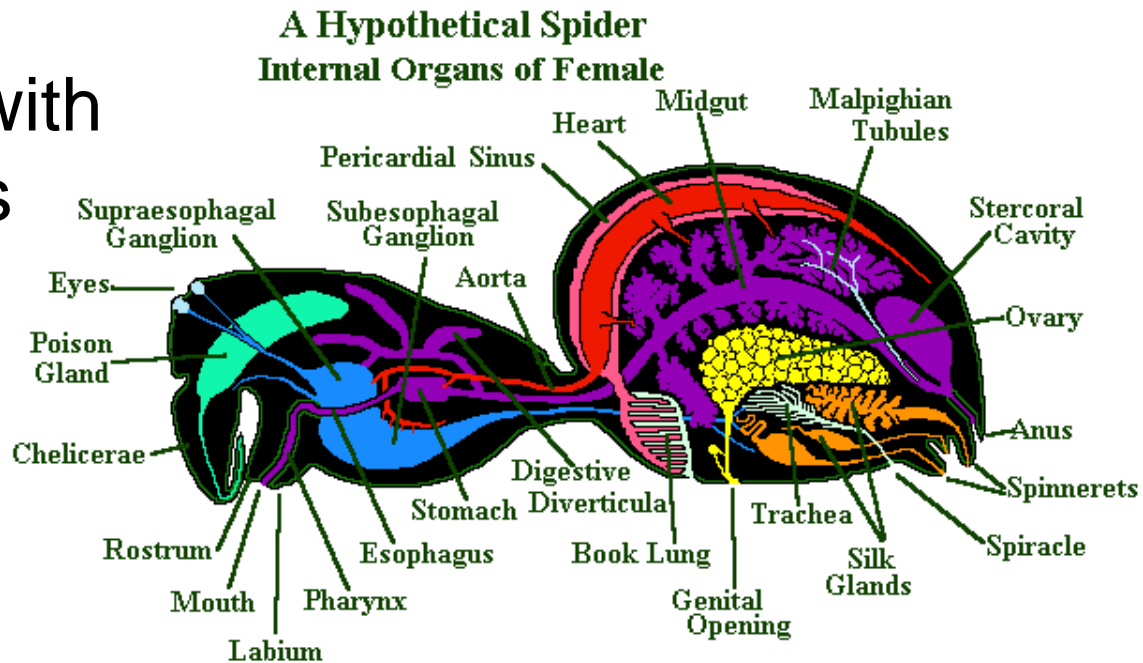
taste sensitive hair

tarsal claws



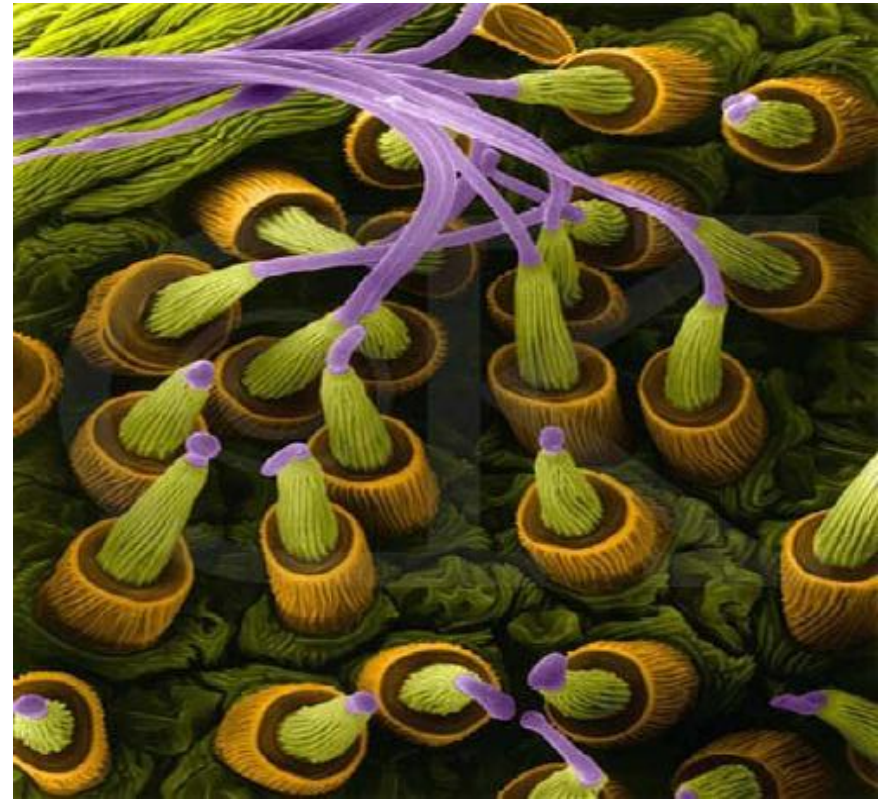
# Abdomen

- Book lungs or trachea to breathe
- Epigastric furrow with reproductive pores and structures
- Spinnerets below anus



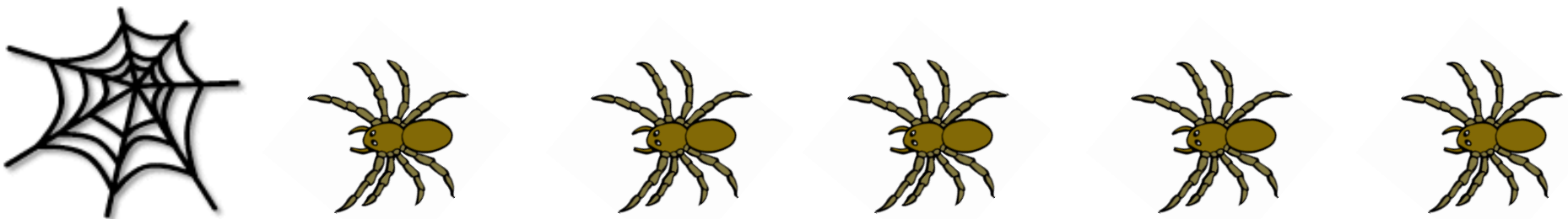
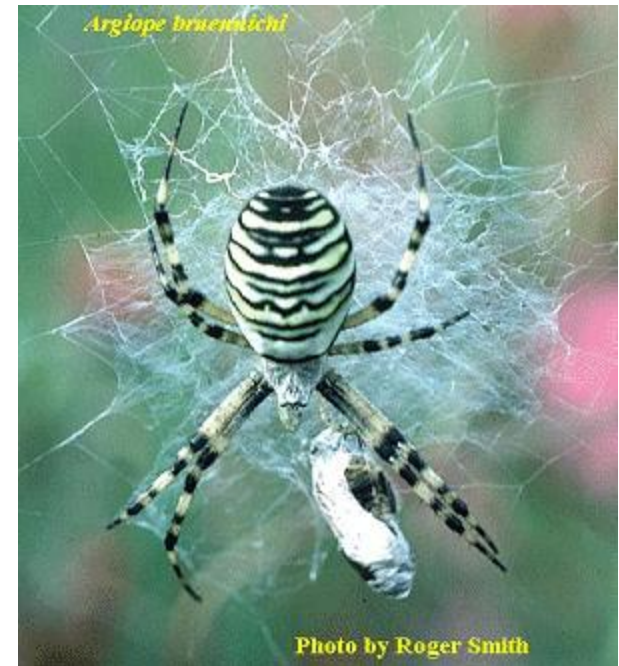
# Silk production

- Silk glands produce silk through numerous spigots on abdomen
- Solidifies quickly
- Similar to caterpillars but produced throughout adult life
- Per diameter stronger than steel and more flexible than rubber



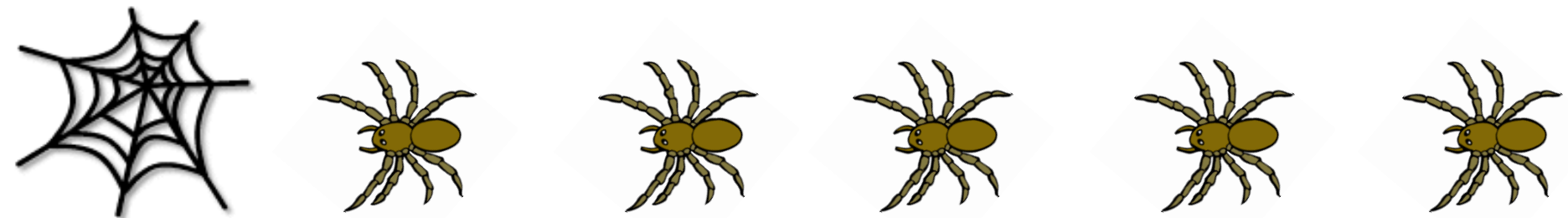
# Silk gland types

- Gland for egg sac silk for females only
- Fibrous for snares and drag lines
- Glue for binding webs
- Two types of sticky for axis/spiral webs
- Cocoons and wraps



# Draglines

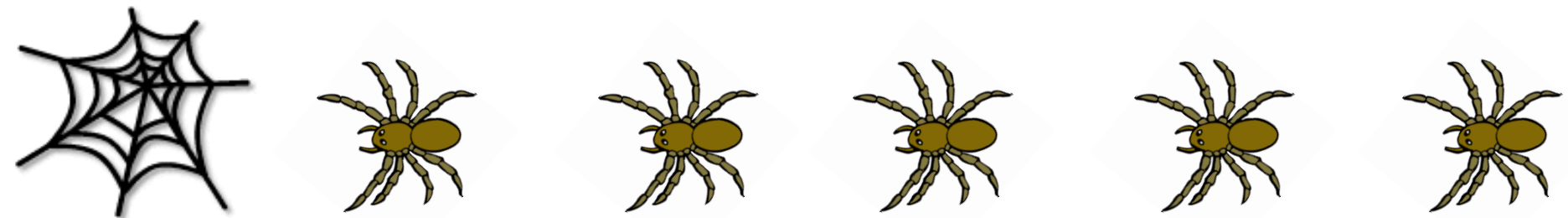
- Used to start a web
- Used to escape from predation: dropline
- Used for ballooning
  - Colonize new areas
  - Drift over 14,000'
  - Drift over 1000 miles
  - Dangerous





# Silk use

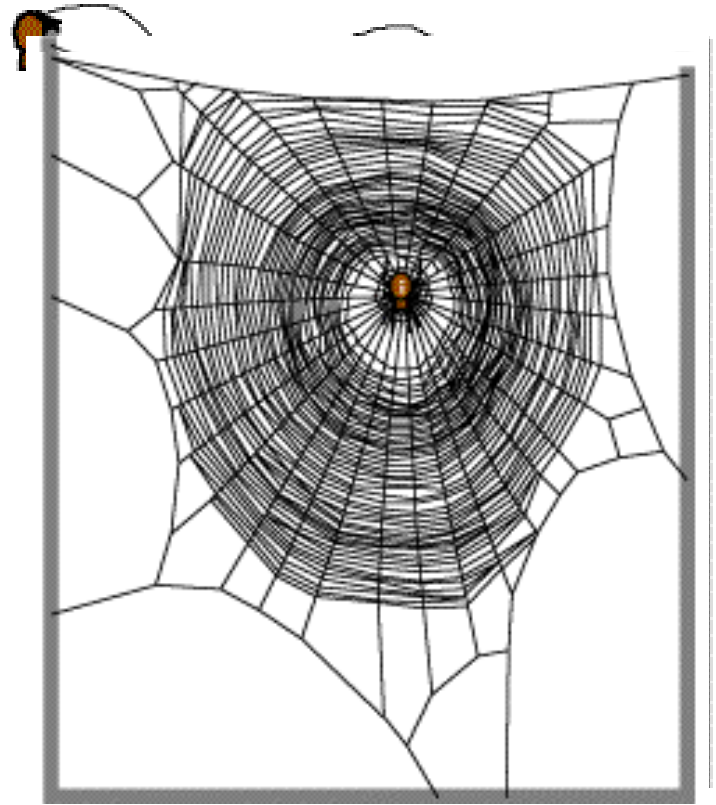
- All spiders use silk
- Not all make a web
- Silk loses elasticity in 1-2 days
- Webs are destroyed by prey and bad weather
- Silk is recycled
- Webs typically rebuilt every day or night





# Orb web

- Orb web is most common
- Ultraviolet silk attracts insects
- Spider sits on edge or middle and senses
- Prey wrapped immediately and eaten

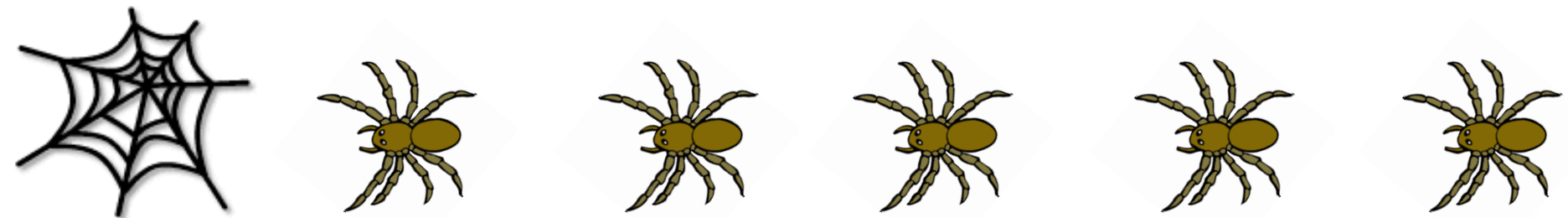


# Orb web



# Funnel Web

- Flat silken mats with funnel exit hole
- Non-sticky
- Draglines knock prey into funnel for quick capture
- Funnel size = approx. spider size



# Sheet web

- Horizontal delicate dome webs in vegetation
- Spider hangs beneath waiting for prey that become tangled in vertical strands and fall into dome





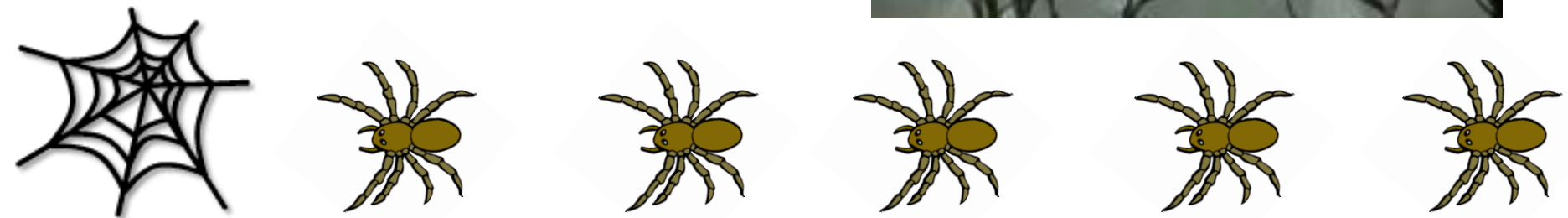
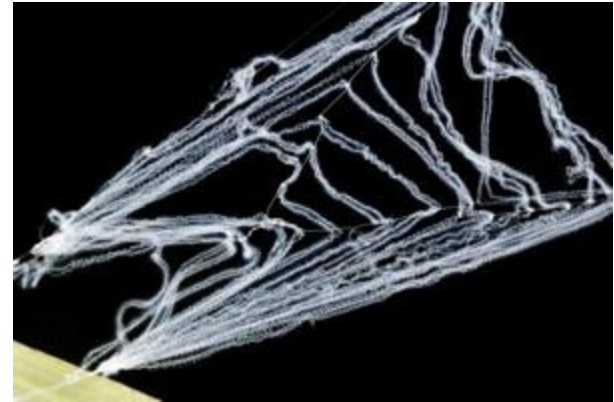
# Tubular Web

- Placed along tree trunk or structure
- Once prey walks over tube the spider climbs up for capture
- Tube repaired after each meal
- Spider resides in burrow at base of tube



# Irregular webs

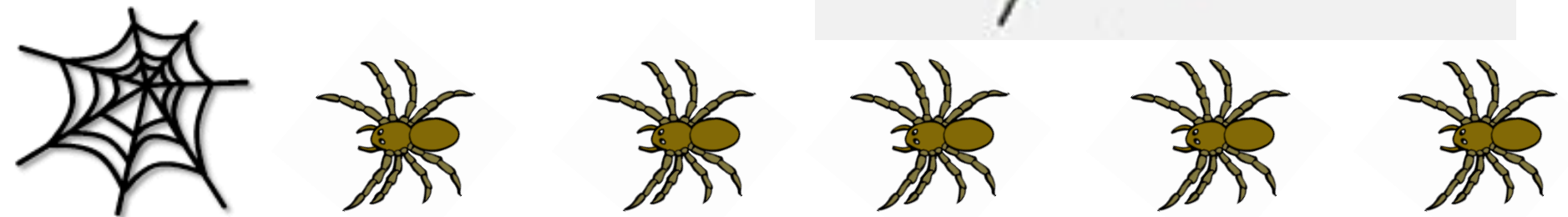
- Loose dome styles
  - cobwebs
- Web casting spiders
- Netting spiders
- Orb slingshot
- Leaf nest
- Community groups
- Air bubble house





# Spider life cycle

- In spring hundreds of spiderlings hatch from an egg cocoon
- Leave after first molt
- They are born with the ability to make silk and capture prey
- Some are orphaned
- Others are carried



# Dispersal

- After a several days to several weeks the young disperse
- Balloon vast distances
- Bridge short distances
- Terrestrial walkers
- Many don't survive to adulthood

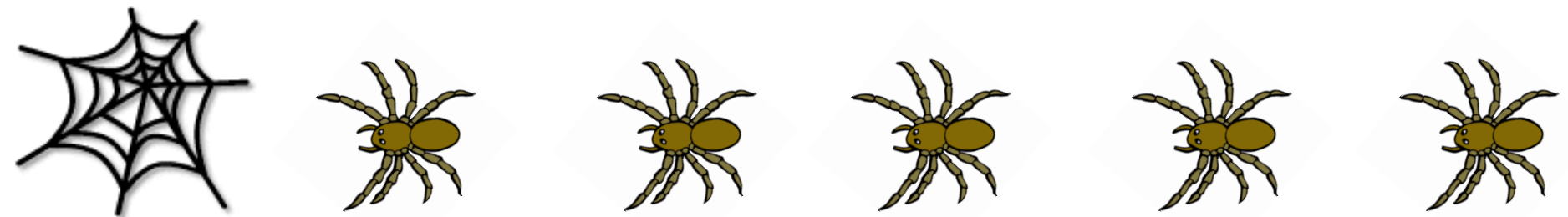
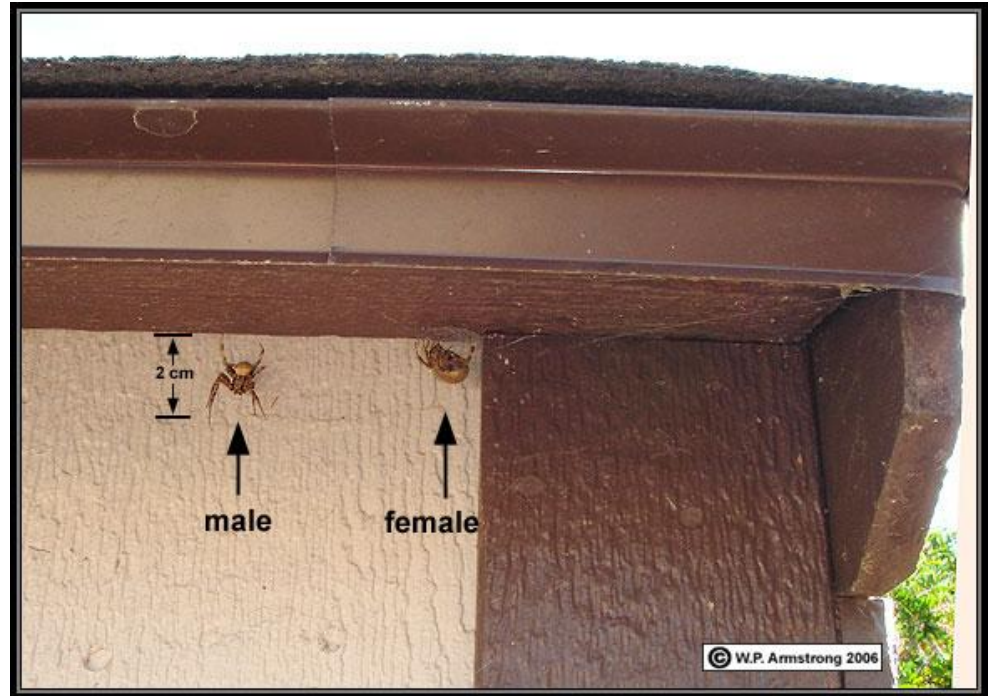


## Balloonng



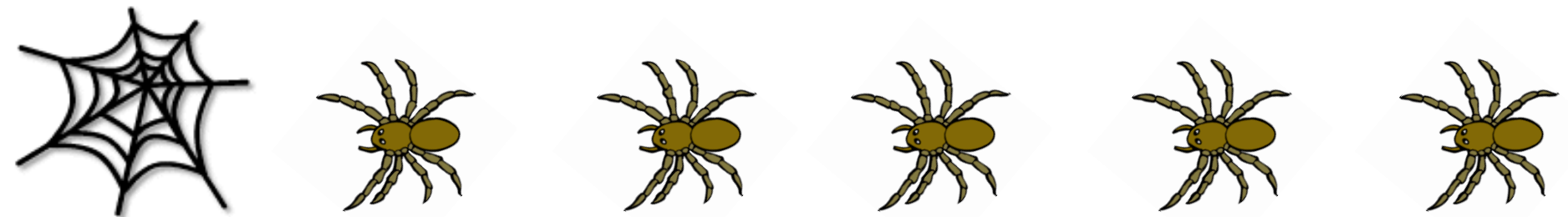
# Colonize

- Most are territorial
- Don't compete they interfere
- Overabundance or food shortage will cause a move
- Very adaptable



# Eat, eat and avoid being eaten

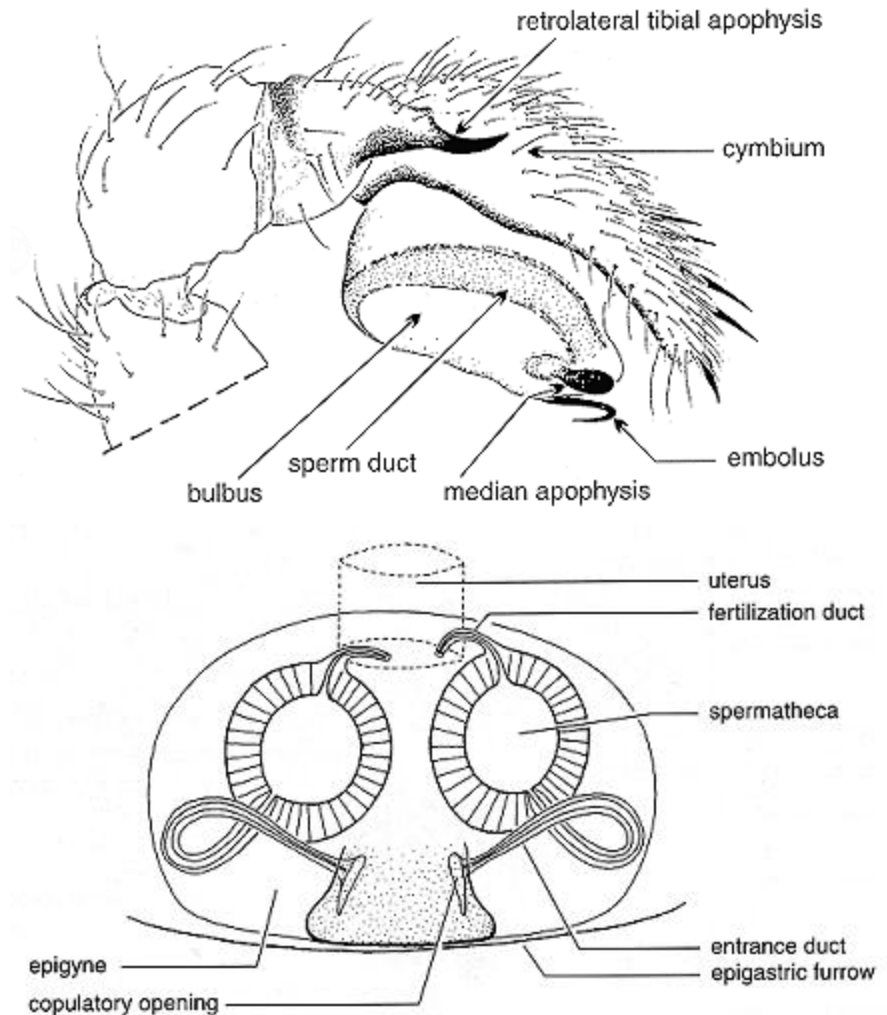
- Not particular about insect prey
- Cannibalistic
- Smaller or = size prey
- Inject venom, liquefy and drink prey
- Famine tolerant
- Weather sensitive





# Fall breeding

- In fall females are able to breed
- Males develop sperm web and transfer to pedipalps
- Males must convince females not to eat them
- Adults live only 1 year



## Courtship





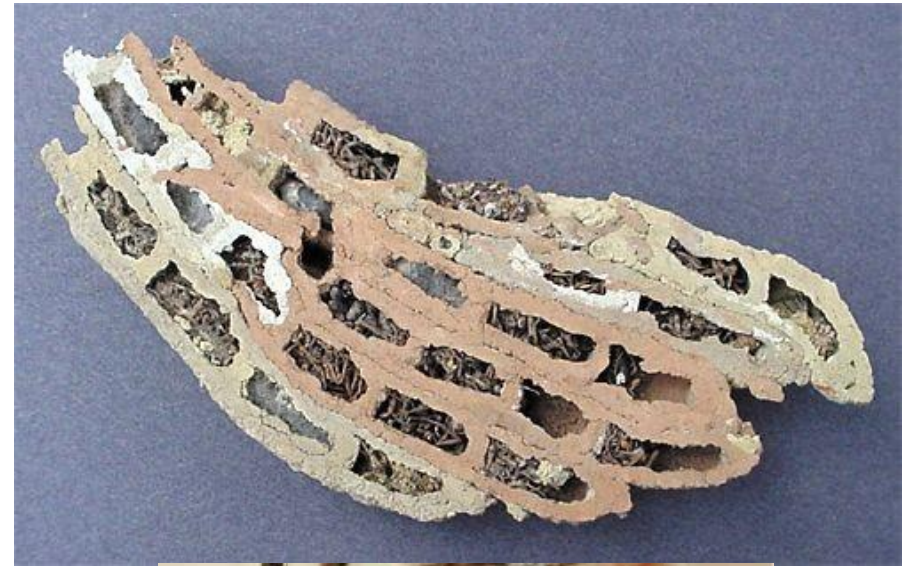
# Egg sac

- Female spins egg sac cocoon
- May leave it, guard it or carry it
- Sacs may contain 2-2000 eggs
- 1-4 egg sacs
- Over winter as eggs



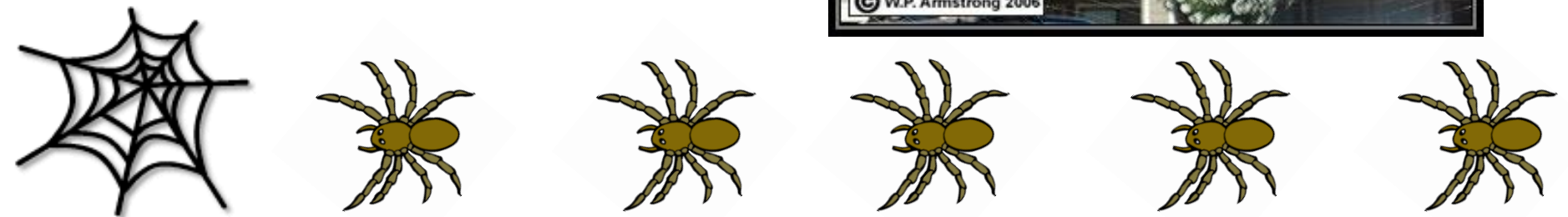
# Spider enemies

- Egg sacs and adults are parasitized by wasps
- Mud Dauber paralyze spiders for their young
- Carolina Wrens feed chiefly on spiders
- Lizards
- Other spiders



# Spiders help us

- Insect control in suburban areas
- Protect certain plants from harmful insects
- Can significantly reduce crop loss by aphid control
- Cannot affect outbreaks



# Do we help spiders?

- Declines are due to habitat loss and degradation
- Entire community must be protected
- Ecological indicators
  - Presence
  - Range shift
- Air and ground pollution





# Protected

- 8 arachnids are listed as Endangered Species
  - 6 TX cave spiders
  - 1 HI cave spider
  - 1 NC/TN spider
- Several more are proposed





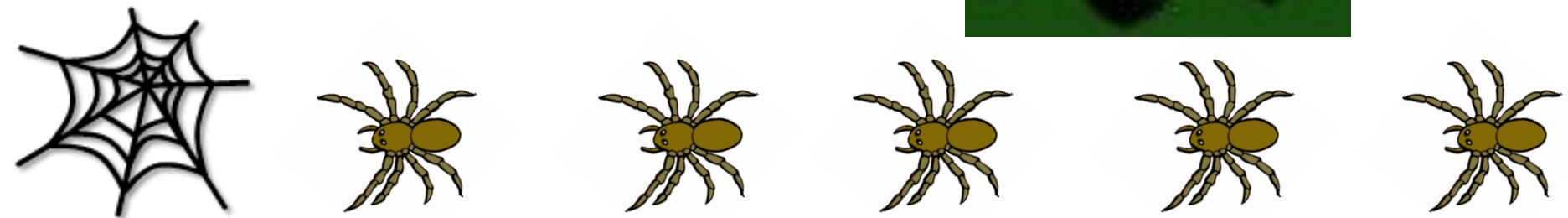
# Spruce-fir Moss Spider

- Endangered
- Restricted to high elevation southern Appalachian forests
- Five counties in NC
- Habitat Loss and degradation
- Balsam Woolly Adelgid



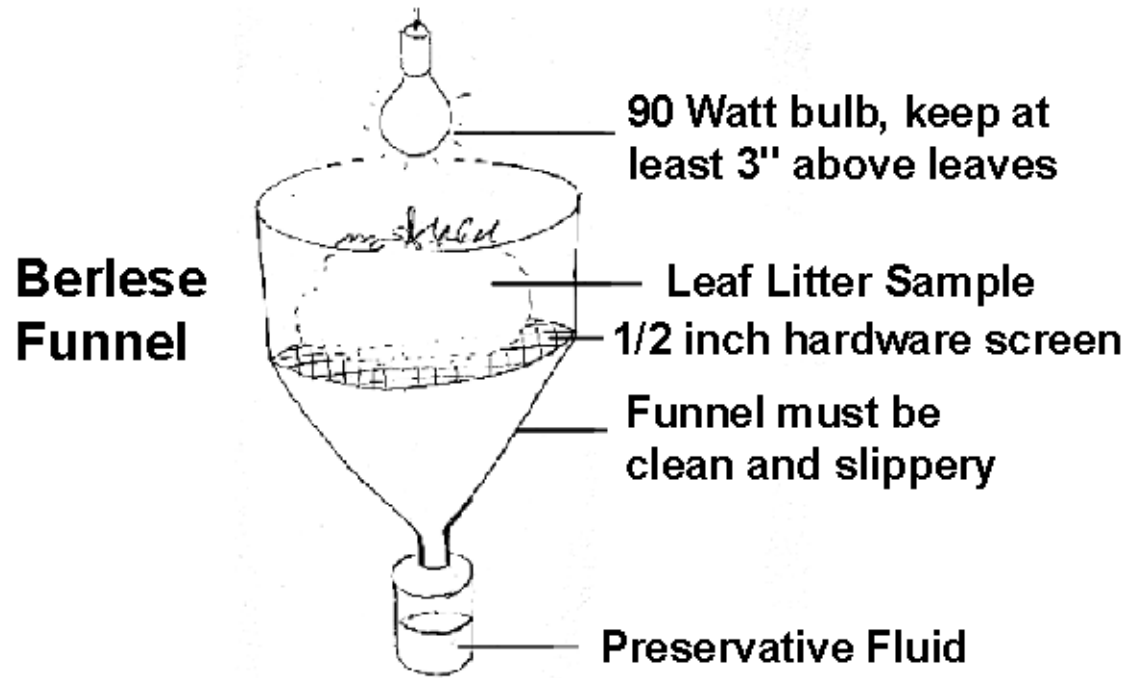
# Spider Conservation

- Protect all habitats
- Control invasive exotic species
- Educate the public
- Smart growth
- Catch and release
- Join local and state nature groups



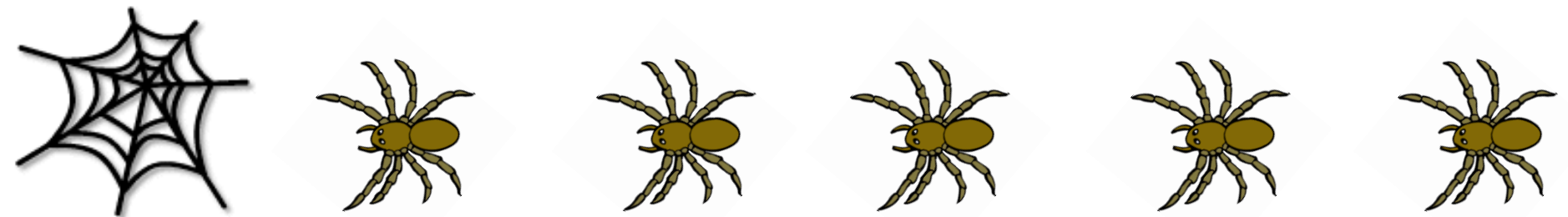
# Spider Monitoring

- Visual Search
- Sweep netting
- Beat sheets
- Pitfall Traps
- Litter Sampling
  - Burlese Funnel
- OH and CO performing state surveys



# Spider Education

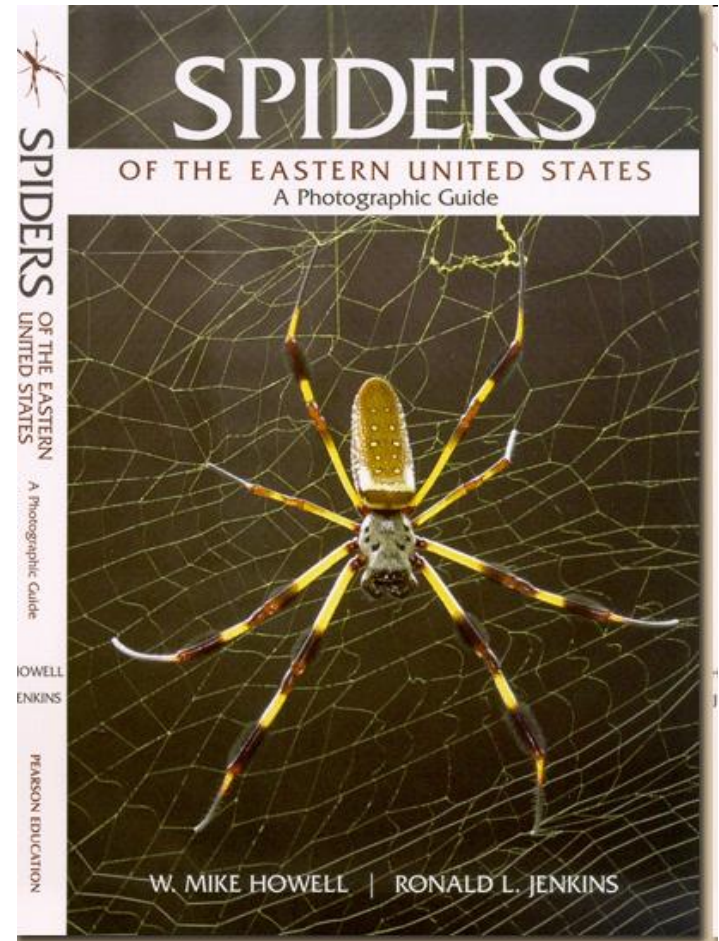
- Numerous Activities
  - Spider sensations
  - Amateur naturalists
  - Where spiders live
- Crafts and costumes
- Puzzles and games
- Giveaways



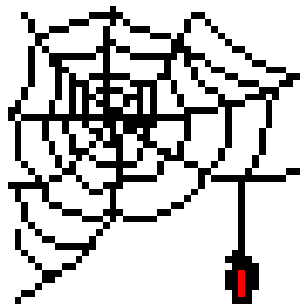


# Resources

- How to Know Spiders
- Spiders of the Eastern United States
- Spiders and their kin (golden guide)
- The book of spiders
- Numerous storybooks
- Numerous picture books







# SPIDER FAMILIES

[www.bugguide.net](http://www.bugguide.net)

[Jumping Spider](#)



# Family atypidae

## Purseweb Spider - *Sphodros rufipes*

- Eastern
- 8 species
- Tube of silk 4-6" below ground and 8-10" above
- Large palps



# Family Ctenizidae

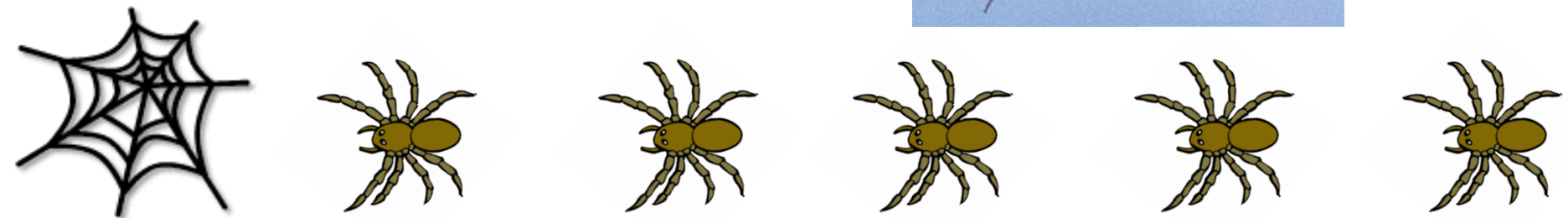
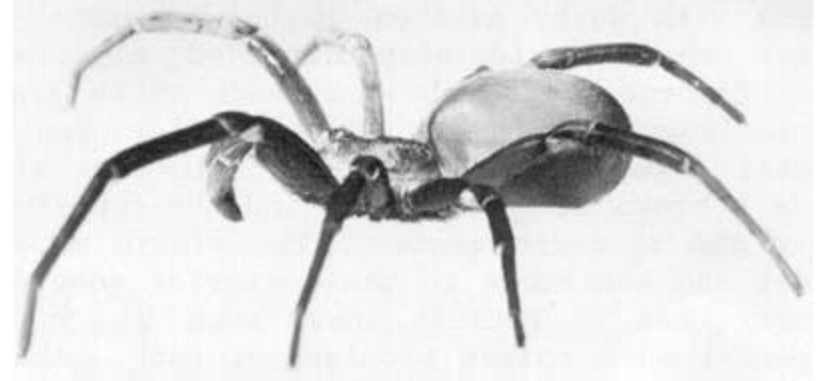
## Trap door spider – *Cyclocosmia truncata*

- 14 species
- Blunt abdomen
- Burrow with silken hinged door
- Up to 10" deep
- Quarter size diameter
- Used for hunting and home for young



# Family Filistatidae Crevice weavers

- Seven species described
- *Kukulcania hibernalis* most common in US
- Small webs around sills or cracks
- Rarely seen
- Come out to feed





# Family Sicariidae

## Sixeyed Sicarid Spiders

- 13 species
- Brown Recluse
- Webs built under logs and rocks outdoors
- Basements, closets and clothing
- Newspapers and cardboard boxes

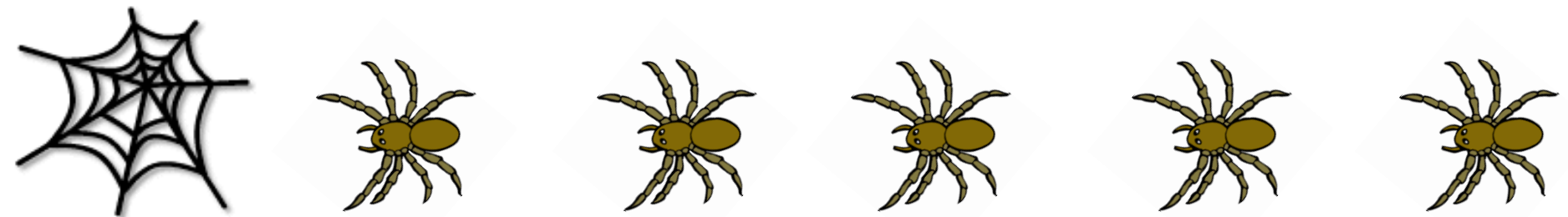




# Family Scytodidae

## Spitting spiders – *Scytodes thoracica*

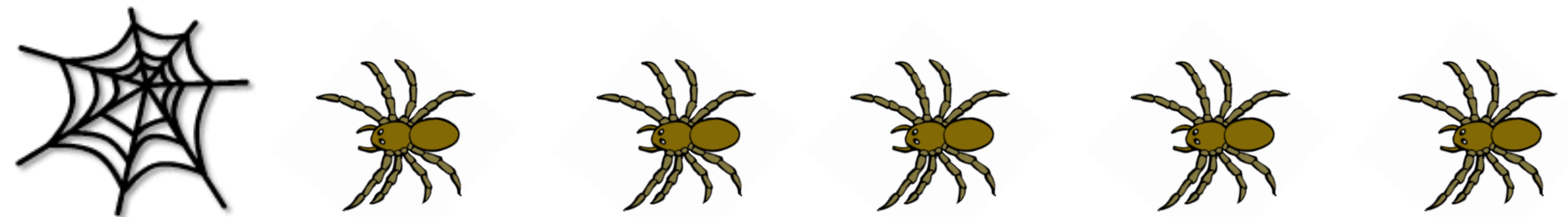
- 6 species
- Nocturnal and slow
- Native to Europe
- Spits a stick adhesive on prey
- No webs
- Ground litter, under rocks, cellars and closets



# Family Pholcidae

## Cellar spiders – *Pholcus phalangioides*

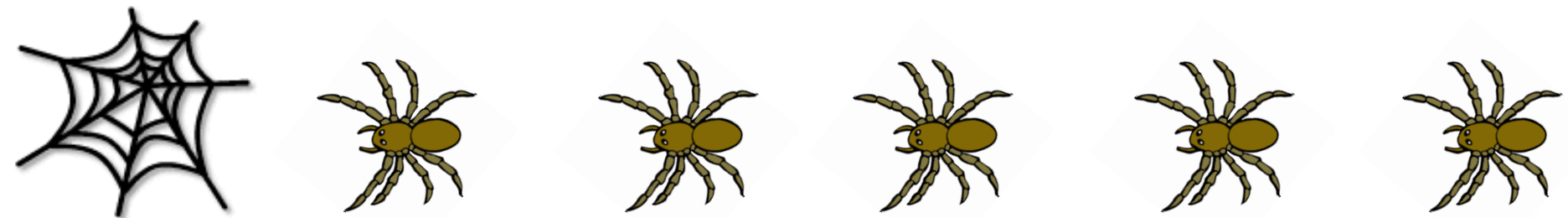
- 36 species in North America
- Long legs
- Dark basements and cellars
- Irregular web in which it hangs upside down
- Shakes to distort and hide itself



# Family Mimetidae

## Pirate Spiders – *Mimetus puritanus*

- 14 species
- Does not spin a web
- Infiltrates other spider webs to steal prey
- Often kills host spider
- Indoor and outdoor



# Family Theridiidae

## Latrodectus Mactans – Southern Black Widow

- 232 species
- Female is black with elongated abdomen
- Male is small and harmless
- Northern Black Widow has back spots and separated hourglass





# Family Tetragnathidae

## Elongate Stilt Orbweaver – *Tetragnatha elongata*

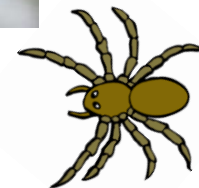
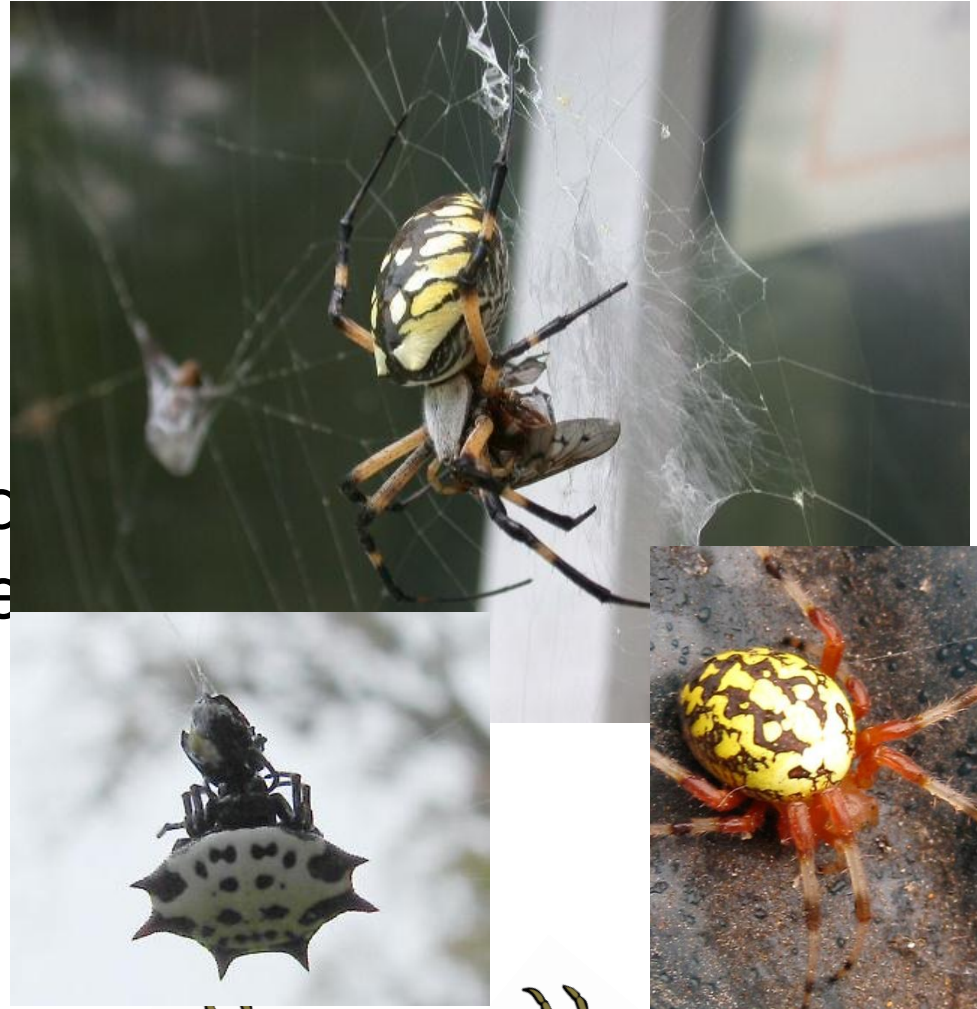
- Slender elongated body
- First pair of legs 10X carapace length
- Chelicerae equal in size to carapace
- Orb web built in grassy areas near lakes or streams



# Family Araneidae

## Orbweavers

- 155 species
- Sedentary, colorful conspicuous spiders
- Standard orb web
- Hide in funnel shaped retreat with signal line
- Argiopes and spiny backed



# Family Lycosidae

## Wolf spiders

- 220 species
- Three rows of eyes for day and night vision and eyeshine
- Carry egg sac and spiderlings
- Stalks insect prey
- Numerous





# Family Pisauridae

## Nursery Web Spiders

- 13 species
- Resemble wolf spiders
- Create web for spiderlings
- Fishing spiders
- Found in brush or trees near water

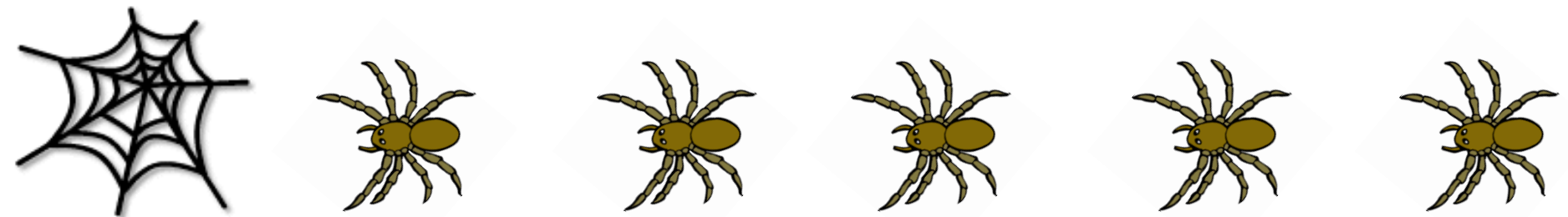




# Family Isyopidae

## Lynx spiders

- 20 species
- Aggressively chase prey in a hide and pounce method
- No webs, snares or retreats
- Female can spit venom while protecting egg sac



# Family Agelenidae

## Funnel Weavers and Grass Spiders

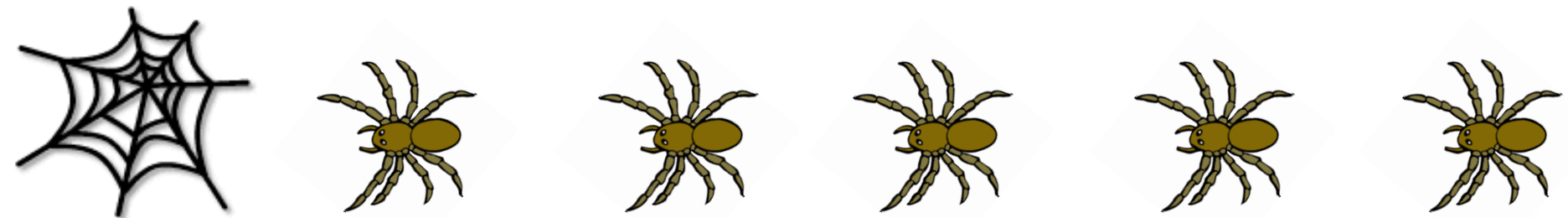
- 283 described sp.
- Spin sheet like non sticky webs in grasses or ground
- Tubular retreat from which it emerges to grab prey and retreat
- Numerous



# Family Corinnidae

## Antmimic spiders

- Look and walk like ants
- Nocturnal hunters
- Hides during day camouflaged
- No webs or snares
- Solitary or can associate with ants



# Family Thomisidae

## Crab spiders

- 100+ species
- Enlarged front legs for seizing prey
- Excellent maneuverability
- Use stealth or ambush
- Match flower color





# Family Salticidae

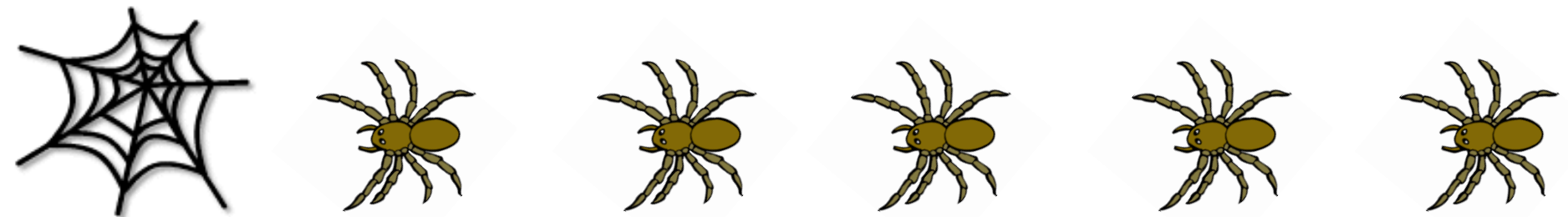
## Jumping spiders

- Numerous species
- Short, stout with broad body
- Brightly colored and marked
- Agile and mobile
- Can jump several times body length



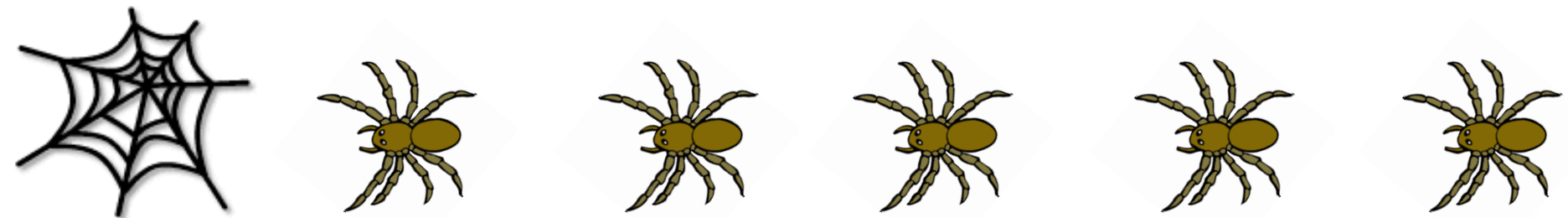
# Spider bite prevention

- Don't reach into dark areas such as woodpiles, rocks or bricks
- Shake out shoes and stored clothing
- Be careful around attics and cellars

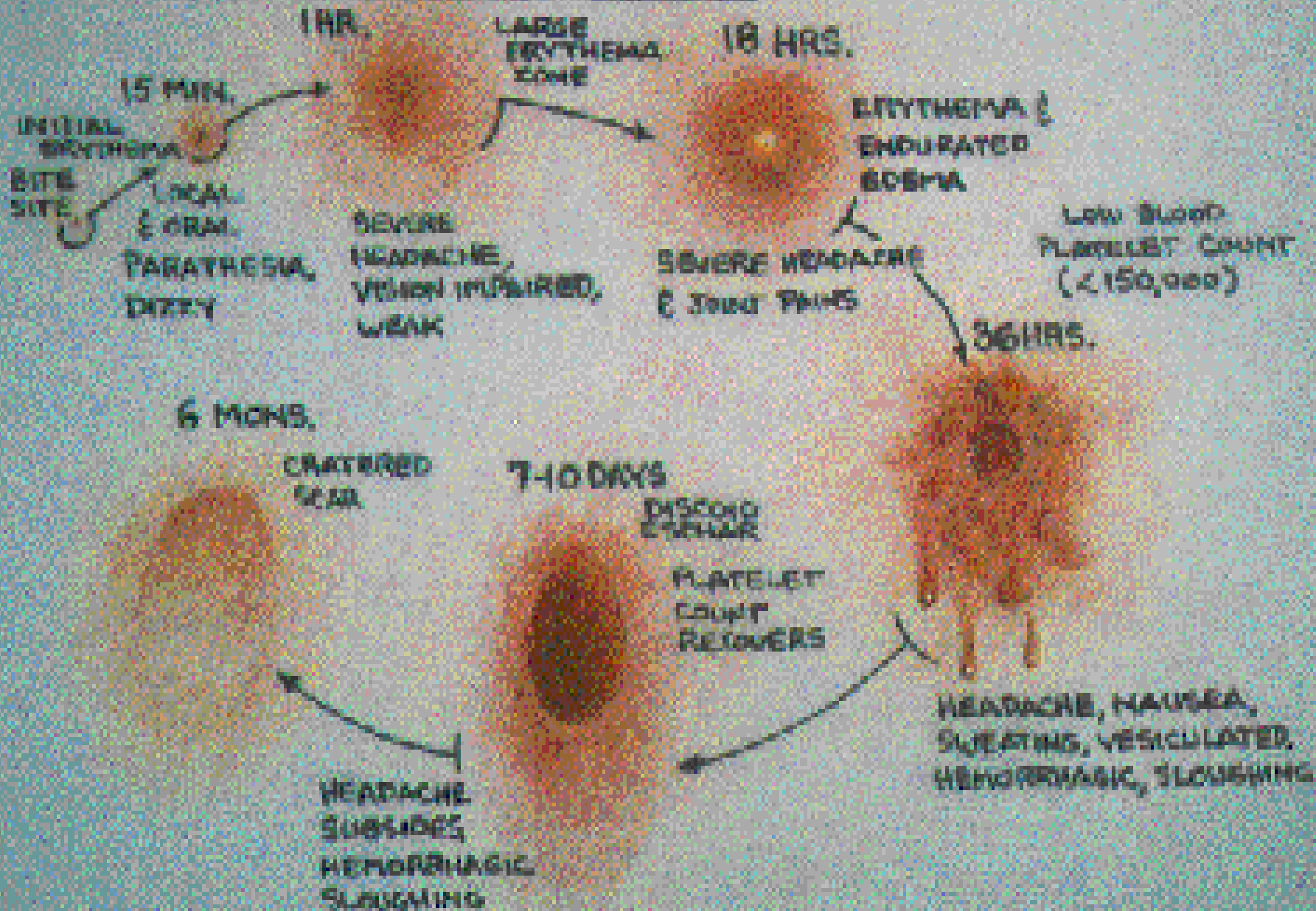


# Spider Bites

- Not always detectable
- Abdomen pain
- Nausea, headaches, sweating, shaking, tingling at bite site
- Treatment necessary
- Female black widow accounts for most
- Painful and skin loss



# NECROTIC ARACHNIDISM SYNDROME -





# Serious Damage to skin



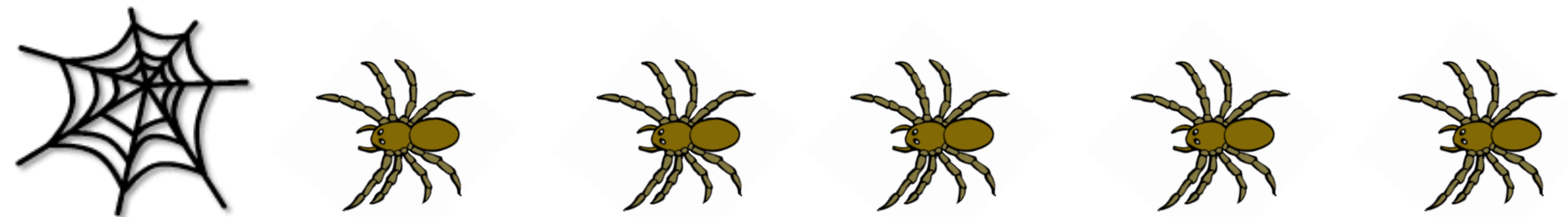
- Day 3



# Serious Damage to skin



- Day 5



# Serious Damage to skin



- Day 10





